252

Nos. 05-11284 & 05-11287

Supreme Court, U.S.
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IN THE

Supreme Court of the United States

JALIL ABDUL-KABIR, fka TED CALVIN COLE,
Petitioner,

v.

NATHANIEL QUARTERMAN, Director, Texas Department of Criminal Justice, Correctional Institutions Division,
Respondent.

BRENT RAY BREWER,
Petitioner,

v.

NATHANIEL QUARTERMAN, Director, Texas Department of Criminal Justice, Correctional Institutions Division,
Respondent.

On Writ of Certiorari to the United States Court of Appeals for the Fifth Circuit

BRIEF OF THE AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY, THE AMERICAN ASSOCIATION ON INTELLECTUAL AND DEVELOPMENTAL DISABILITIES, THE ARC OF THE UNITED STATES, MENTAL HEALTH AMERICA, AND THE NATIONAL ALLIANCE ON MENTAL ILLNESS, AS *AMICI CURIAE* IN SUPPORT OF PETITIONERS

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TABLE OF CONTENTS

	Page
TABLE OF AUTHORITIES	ii
INTEREST OF *AMICI*	1
SUMMARY OF ARGUMENT	1
ARGUMENT	2
I. THIS COURT HAS LONG RECOGNIZED THE CRITICAL IMPORTANCE OF AFFORDING JURIES A FULL OPPORTUNITY TO CONSIDER AND GIVE WEIGHT TO MITIGATING EVIDENCE IN CAPITAL SENTENCING	2
II. EVIDENCE OF ABUSE AND TRAUMA DURING CHILDHOOD CAN BE POWERFULLY MITIGATING, BUT CONSTITUTES A TWO-EDGED SWORD	4
Development of the Brain	5
Stress and PTSD	10
Physical Abuse and Brain Injuries	12
Severe Neglect	19
Sexual and Emotional Abuse	21
Mental Illness and Disability Resulting from Abuse	23
III. EVIDENCE OF A CAPITAL DEFENDANT'S MENTAL ILLNESS ALSO CONSTITUTES A TWO-EDGED SWORD	25
CONCLUSION	28
APPENDIX	1a

TABLE OF AUTHORITIES

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INTEREST OF *AMICI CURIAE*

Amici are national clinical and mental disability organizations (more fully described in the Appendix) with long-standing concerns about legal protections for people with mental disabilities.[1]

SUMMARY OF ARGUMENT

Medical understanding of the consequences of child abuse has made important advances in recent decades. We now know much more about the physical effects of abuse on the child's developing brain. We also have a better understanding of how neurological damage can affect an individual's later behavior, particularly if the abuse goes unrecognized and its effects go untreated during childhood. We are also gaining a fuller understanding of serious mental illness.

This brief summarizes the recent scientific and medical research (almost all of which is published in peer-reviewed journals) on child abuse and mental illness. In particular, Part II of the brief addresses the processes of the development of the brain, the clinical effects of stress and PTSD, physical injuries to the brain, and the effects of sexual and emotional abuse, as well as the mental health and cognitive effects of childhood abuse on adults. Part III of the brief also addresses our understanding of the effects of serious mental illness (whether it is caused by abuse or by other factors).

Evidence that a capital defendant suffered abuse as a child can be a crucial consideration to jurors who are deciding whether to impose the death penalty. Evidence of abuse can be a powerful mitigator because it can help jurors understand why the defendant acted as he did, and help them evaluate

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[1] This brief was written entirely by counsel for *amici*, as listed on the cover, and not by counsel for any party. No outside contributions were made to the preparation or submission of this brief. All parties have given written consent to the filing of this brief.

whether his level of personal culpability warrants the punishment of death. The reason the evidence is potentially mitigating is *not* because it reassures jurors that the defendant is unlikely to commit dangerous acts in the future; indeed, it may persuade them that he is *more* likely to re-offend because they believe that the effects of the abuse may be permanent or the symptoms may recur.

Similarly, evidence that a defendant had a substantial mental illness at the time of the crime can help jurors evaluate the level of his personal culpability. But if jurors are persuaded by the evidence of his mental illness, they may still conclude that the mental illness makes him more likely to be dangerous in the future.

Given the two-edged nature of child abuse and mental illness evidence, the exclusive focus of the Texas "special issues" system on a defendant's prospective dangerousness places the mitigating significance of that evidence beyond the effective reach of capital jurors.

ARGUMENT

I. THIS COURT HAS LONG RECOGNIZED THE CRITICAL IMPORTANCE OF AFFORDING JURIES A FULL OPPORTUNITY TO CONSIDER AND GIVE WEIGHT TO MITIGATING EVIDENCE IN CAPITAL SENTENCING.

A capital jury's evaluation of relevant facts about a defendant is central to the fairness of the determination of whether the defendant should live or die. As Chief Justice Burger observed nearly three decades ago, the Constitution does not permit states to interfere with sentencers' ability to give "independent mitigating weight to aspects of the defendant's character and record and to circumstances of the offense proffered in mitigation." *Lockett v. Ohio*, 438 U.S. 586, 605 (1978) (plurality opinion). And the Court has

frequently observed that evidence about a defendant's abuse as a child, and evidence of mental impairment, are particularly "powerful" factors in mitigation. *Wiggins v. Smith*, 539 U.S. 510, 534 (2003). *See Penry v. Lynaugh*, 492 U.S. 302, 337 (1989) ("[V]irtually all of the States with death penalty statutes that list statutory mitigating factors include as a mitigating circumstance evidence that '[t]he capacity of the defendant to appreciate the criminality of his conduct or to conform his conduct to the requirements of law was substantially impaired.'"); *Tennard v. Dretke*, 542 U.S. 274, 287 (2004) ("impaired intellectual functioning is inherently mitigating").

States that have the death penalty vary in the precise rules guiding the process by which juries evaluate aggravating and mitigating evidence. But while states may guide the consideration of mitigating evidence, they may neither categorically exclude, nor place out of jurors' effective reach, factors that could inform their understanding of defendant and his actions. *See Johnson v. Texas*, 509 U.S. 350, 372-73 (1993); *Graham v. Collins*, 506 U.S. 461, 475 (1993).

The system adopted by Texas to focus the penalty phase on particular "special issues" has engendered considerable constitutional litigation. This Court has upheld the statute's overall structure, *see Jurek v. Texas*, 428 U.S. 262 (1976), but has insisted that the state cannot impede jurors' consideration of mitigating evidence that its special issues do not reasonably accommodate. *Penry v. Lynaugh*, 492 U.S. 302 (1989); *Penry v. Johnson*, 532 U.S. 782 (2001); *Tennard v. Dretke*, 542 U.S. 274 (2004). In particular, the Court has stressed that the special issues may not provide the jury an adequate vehicle for making the sentencing decision when the defendant's proffered evidence is "a two-edged sword [that] may diminish his blameworthiness for his crime even as it indicates that there is a probability that he will be dangerous in the future." *Penry v. Lynaugh*, 492 U.S. at 324.

Amici believe that evidence of child abuse and mental illness are similarly two-edged swords.

II. EVIDENCE OF ABUSE AND TRAUMA DURING CHILDHOOD CAN BE POWERFULLY MITIGATING, BUT CONSTITUTES A TWO-EDGED SWORD.

Although there were earlier clinical studies and evaluations, widespread public recognition of the problems and consequences of child abuse developed in the 1970s.[2] This increased awareness led Congress to enact the Child Abuse Prevention and Treatment Act, Pub. L. No. 93-247 (1974), which has been repeatedly expanded and updated and is now codified at 42 U.S.C. § 5101 *et seq.* (Child Abuse Prevention and Treatment and Adoption Act).

As our society's awareness of child abuse and trauma has increased, substantial advances have been made by researchers and clinicians in understanding both the causes and the long-term effects of such injuries. These findings about the effects of abuse and trauma on children, and the effects on their functioning later in life, are particularly relevant to the issue of mitigation evidence in capital trials involving individuals who experienced serious harm as children.

The abuse of children takes many forms.[3] It may involve battering and other physical abuse, severe neglect, emotional mistreatment, or sexual abuse. Far too many children suffer

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[2] *See generally* H.R. Rep. No. 93-685 (1973), *reprinted in* 1974 U.S.C.C.A.N. 2763. *See also The Battered Child* (Ray E. Helfer & C. Henry Kempe eds., 2d ed. 1974).

[3] Sadly, this Court is not unfamiliar with the appalling consequences of the abuse of children. *See DeShaney v. Winnebago County Department of Social Services*, 489 U.S. 189, 191-93 (1989).

abuse that involves more than one of these categories.[4] In addition, children can be drastically affected by traumatic events experienced in their early lives, including such events as the violent deaths of loved ones or extreme emotional neglect.[5]

To appreciate the significance of child abuse in capital sentencing, it is necessary to understand the process of the brain's development and the damage that various forms of abuse can cause.

Development of the Brain

The human brain develops and organizes at an explosive rate in the first years of life. As a result, major childhood events can have an extraordinary and enduring effect. Our scientific understanding of this phenomenon has advanced dramatically in recent decades. In particular, we now

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[4] In one major study, "81% of maltreated child and adolescent subjects reported that they experienced more than one type of maltreatment. Fifty-three percent of these maltreated children experienced at least three types of maltreatment during their lives." Michael D. De Bellis, Elsie R. Broussard et al., *Psychiatric Co-Morbidity in Caregivers and Children Involved in Maltreatment: A Pilot Research Study with Policy Implications*, 25 Child Abuse & Neglect 923, 937 (2001); *see also* Valerie J. Edwards, George W. Holden et al., *Relationship Between Multiple Forms of Childhood Maltreatment and Adult Mental Health in Community Respondents: Results from the Adverse Childhood Experiences Study*, 160 Am. J. Psychiatry 1453 (2003); Howard B. Levy, John Marcovic et al., *Re-Abuse Rates in a Sample of Children Followed for 5 Years After Discharge from a Child Abuse Inpatient Assessment Program*, 19 Child Abuse & Neglect 1363 (1995); Maxia Dong, Robert F. Anda et al., *The Relationship of Exposure to Childhood Sexual Abuse to Other Forms of Abuse, Neglect, and Household Dysfunction During Childhood*, 27 Child Abuse & Neglect 625, 635 (2003) (counseling diagnosticians to be watchful for multiple forms of abuse of the same child).

[5] *See, e.g.*, De Bellis, Broussard et al., *supra* note 4, at 937 ("The majority of maltreated child and adolescent subjects reported that they witnessed domestic violence (85%).").

understand more fully the *physical* and *long lasting* effects of biological and neurological changes in the brain when the child becomes an adult.[6]

This understanding arises from our increased knowledge about the growth and evolution of the brain during childhood. "The period from birth to adulthood is marked by progressive physical, behavioral, cognitive, and emotional development. Paralleling these stages are changes in brain maturation."[7] In normal development, the child's brain begins with the most basic, even primitive, functions and abilities. Starting with the development of the brainstem, the child consolidates basic abilities to alert the nervous system to stimuli, monitor and maintain the basic internal environment of the body (known as homeostasis), and sense events in the child's environment.

This sequential development continues in later months and years, and the child's brain acquires the ability to perform somewhat more complex functions, such as processing (rather than merely experiencing) external stimuli and regulating internal emotional responses.[8] These abilities accompany the development of the lobes of the frontal cortex, the amygdala

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[6] *See* Bruce D. Perry & Ronnie Pollard, *Homeostasis, Stress, Trauma, and Adaptation: A Neurodevelopmental View of Childhood Trauma*, 7 Child & Adolescent Psychiatric Clinics N. Am. 33 (1998).

[7] Michael D. De Bellis, *The Psychobiology of Neglect*, 10 Child Maltreatment 150, 151 (2005). For a general description of the brain's maturation process, see *Mental Health: A Report of the Surgeon General* 32-39 (U.S. Dep't Health & Human Serv. 1999).

[8] Bruce D. Perry, *Neurodevelopmental Impact of Violence in Childhood*, in *Principles and Practice of Child and Adolescent Forensic Psychiatry* 191, 192 (Diane H. Schetky & Elissa P. Benedek eds., American Psychiatric Association 2002). For a particularly helpful explanation of this process, see Adele Diamond, *Normal Development of Prefrontal Cortex from Birth to Young Adulthood: Cognitive Functions, Anatomy and Biochemistry*, in *Principles of Frontal Lobe Function* 466 (Donald T. Stuss & Robert T. Knight eds., Oxford U. Press 2002).

in the center of the brain and other, more advanced, functions. Portions of the mid-brain and the brainstem then acquire the ability to help the higher brain fashion appropriate responses to the environment. As these abilities develop and begin to mature, the child gains more sophisticated skills, allowing him to deal with the outside world and with his own emotional reactions. These developments enable the child to resist impulses and to correct misperceptions of social, as well as potentially threatening, situations.[9]

Unfortunately, this pattern of normal development can be interrupted, arrested, and distorted. And the fact that the child's brain is still developing greatly increases its vulnerability to external threats and harms. "[A]lthough plasticity in the developing brain represents a window of opportunity in normal circumstances, it also represents a period of vulnerability in adverse ones."[10] Different forms of child abuse can transform that vulnerability into lasting damage to the child's mental, emotional, and behavioral development. We now know that those sometimes catastrophic effects can often be traced to physical changes in the brain itself.

The distortions and interruptions of the brain's development that can result from physical trauma and other forms of abuse can have devastating consequences. For example, if the amygdala fails to develop normally, the individual's ability to interpret the emotional expression and communi-

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[9] F. Gerard Moeller, Ernest S. Barratt et al., *Psychiatric Aspects of Impulsivity*, 158 Am. J. Psychiatry 1783, 1785 (2001) ("research has supported the idea that damage to the frontal cortex is a cause of at least some aspects of impulsivity").

[10] Charles A. Nelson & Leslie J. Carver, *The Effects of Stress and Trauma on Brain and Memory: A View from Developmental Cognitive Neuroscience*, 10 Development & Psychopathology 793 (1998); *see* Bruce D. Perry, Ronnie A. Pollard et al., *Childhood Trauma, the Neurobiology of Adaptation, and "Use-Dependent" Development of the Brain: How "States" Become "Traits,"* 16 Infant Mental Health J. 271, 285 (1995).

cation of other people can be diminished.[11] If the development of the brain's synapses is impaired, the individual may have distorted perceptions and reactions throughout his life.[12] If this maturation process is interrupted or stunted during childhood, the individual, as an adult, may grossly misinterpret situations and respond to them in inappropriate and sometimes tragic ways.

An example of such distorted reactions can involve exaggerated perceptions of physical threats from others. As a child experiences normal development, portions of the midbrain and brainstem acquire the ability to evaluate sensory indications of potential dangers. These instantaneous processes allow the individual to process the so-called "fight-or-flight" decisions necessary to both survival and adaptation to living in society.[13] If the development of these areas of the

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[11] *See* Ralph Adolphs, Simon Baron-Cohen & Daniel Tranel, *Impaired Recognition of Social Emotions Following Amygdala Damage*, 14 J. Cognitive Neuroscience 1264 (2002); Bruce S. McEwen, *Early Life Influences on Life-Long Patterns of Behavior and Health*, 9 Mental Retardation & Developmental Disability Research Rev. 149, 150 (2003) ("Past experiences during early life, and states of chemical imbalance associated with depressive illness and post-traumatic stress disorder, can bias the ways in which the amygdala performs these functions.").

[12] *See* Peter R. Huttenlocher, *Synaptogenesis in Human Cerebral Cortex*, in *Human Behavior and the Developing Brain* 137-52 (Geraldine Dawson & Kurt W. Fischer eds., 1994). "The synapse is a dynamic structure. . . . When there is little activity, the synaptic connection will literally dissolve. . . . While somewhat simplistic, it appears that synaptic sculpting is a 'use it or lose it' process. . . . This powerful activity-dependent process appears to be the molecular basis of learning, memory and, therefore, at the core of neurodevelopment." Bruce D. Perry, *Childhood Experience and the Expression of Genetic Potential: What Childhood Neglect Tells Us About Nature and Nurture*, 3 Brain & Mind 79, 85 (2002).

[13] In this process, neural signals tend to increase blood flow to the body's large muscles, "telling" the body that it is under threat and that it must either run away or fight. *See* Paramjit T. Joshi, Peter T. Daniolos &

brain is impaired, a child may fail to acquire the neurodevelopmental skills necessary for normal reactions. "Under traumatic conditions, the body's physiology responds by creating biological patterns in the brain that keep the child on guard or hypervigilant. But the body becomes accustomed to the constantly high levels of this 'fight or flight' biological response, which results in a steady state of hyperarousal. These adaptive symptoms, too, become overgeneralized with time and return unbidden when the adult encounters relatively innocent stimuli. As might well be imagined, adult survivors [of abuse] who are always aroused and vigilant have difficulty controlling their emotions and their actions."[14]

As the following sections will demonstrate, child abuse can cause these distortions in the brain's development. However, the nature of this harm may go unrecognized or misdiagnosed during the individual's childhood. Referring to these processes as a "veiled cascade of events," one recent study noted that "[e]xtreme, traumatic or repetitive childhood stressors such as abuse, witnessing or being the victim of

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Jay A. Salpekar, *Physical Abuse of Children*, in *Textbook of Child and Adolescent Psychiatry* 842 (Jerry M. Wiener et al. eds., 3d ed. 2004).

[14] Barbara Everett & Ruth Gallop, *The Link Between Childhood Trauma and Mental Illness* 27 (2001). *See generally* Deborah A. Weber & Cecil R. Reynolds, *Clinical Perspectives on Neurobiological Effects of Psychological Trauma*, 14 Neuropsychology Rev. 115 (2004); Jeffrey B. Bryer, Bernadette A. Nelson et al., *Childhood Sexual and Physical Abuse as Factors in Adult Psychiatric Illness*, 144 Am. J. Psychiatry 1426 (1987); Bruce D. Perry, *Applying Principles of Neurodevelopment to Clinical Work with Maltreated and Traumatized Children: The Neurosequential Model of Therapeutics*, in *Working with Traumatized Youth in Child Welfare* 27, 34 (Nancy Boyd Webb ed., 2006) ("A young child growing up in a home with pervasive threat, for example, will create a set of associations—primarily precortical and therefore out of his or her conscious awareness—between a host of neutral cues and threat. For the rest of the child's life, these neutral cues will have the capacity to activate a fear response and therefore to alter emotions, behaviors, and physiology.").

domestic violence" are "common, tend to be kept secret, and go unrecognized by the outside world."[15] Sadly, sometimes the damage children suffer is only identified in retrospect. When recognized, even at such a late date, it can help us understand why individuals may have acted as they did. And while not justifying the behavior, that understanding is essential to assessing the level of personal responsibility in deciding whether a capital defendant is to live or die.

Stress and PTSD

In medicine, "stress" is something of a term of art. In its ordinary-language sense, "stress" means the pressures and challenges that are part of all of our (including children's) lives. While confronting stress in this sense is difficult, it is also essential for growth and development. Indeed, if a young child does *not* confront a succession of challenging events, the process of neurological development and learning can be stunted. In that sense, stress is both normal and indispensable.

But when physicians use the term stress regarding pathologies (as in "posttraumatic stress disorder"[16] or "PTSD") they are referring to stressors that exceed what the brain can handle at a particular stage of life. "[S]tress is something in

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[15] Robert F. Anda, Vincent J. Felitti et al., *The Enduring Effects of Abuse and Related Adverse Experiences in Childhood: A Convergence of Evidence from Neurobiology and Epidemiolgy*, 256 Eur. Archives Psychiatry & Clinical Neuroscience 174, 180 (2006). "Likewise, the fight-or-flight response among children exposed to these types of stressors, and the attendant release of endogenous catecholamines and adrenal corticosteroids are both uncontrollable and invisible." *Id.* In a sense, this "cascade" of life events mirrors the "cascade model" of neurobiological events that follow traumatic stressors on a child's brain. *See* Martin H. Teicher, Susan L. Andersen et al., *Developmental Neurobiology of Childhood Stress and Trauma*, 25 Psychiatric Clinics N. Am. 397, 400 (2002).

[16] For a fuller discussion of PTSD, *see infra* p.17.

the environment that might disrupt or change the normal functioning of an individual, including his or her very assumptions about the nature of the world and the self. Trauma involves stress that is more severe than and exceeds normal human resources for coping."[17]

Not surprisingly, the disruptions of brain function caused by child abuse produce a very high incidence of mental illness in children.[18] Such stressors can also have a substantial impact on a child's behavior.[19] For example, "[a]s

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[17] Nelson & Carver, *supra* note 10, at 801; *see also* Michael D. De Bellis, Andrew S. Baum et al., *Developmental Traumatology Part I: Biological Stress Systems*, 45 Biological Psychiatry 1259 (1999). For an overview of the biological research, drawing from both human and animal studies, see J. Douglas Bremner & Eric Vermetten, *Stress and Development: Behavioral and Biological Consequences*, 13 Development & Psychopathology 473 (2001). On the characteristics of stress, see generally Michael Gelder, Dennis Gath et al., *Oxford Textbook of Psychiatry* 76 (3d ed. 1996).

[18] *See* Sandra J. Kaplan, David Pelcovitz & Victor Labruna, *Child and Adolescent Abuse and Neglect Research: A Review of the Past 10 Years, Part I: Physical and Emotional Abuse and Neglect*, 38 J. Am. Acad. Child & Adolescent Psychiatry 1214, 1217 (1999). Indeed, there has been a suggestion that the similarity of symptoms between PTSD and other forms of mental illness may lead to confused diagnoses that underreport the incidence of PTSD. *See* Richard Famularo, Robert Kinscherff & Terence Fenton, *Posttraumatic Stress Disorder Among Children Clinically Diagnosed as Borderline Personality Disorder*, 179 J. Nervous & Mental Disease 428, 430 (1991). Among the mental illnesses reported, clinical depression is one of the most widespread among the victims of early childhood stressors. Thaddeus W.W. Pace, Tanja C. Mletzko et al., *Increased Stress-Induced Inflammatory Responses in Male Patients with Major Depression and Increased Early Life Stress*, 163 Am. J. Psychiatry 1630 (2006); Joan Kaufman & Dennis Charney, *Effects of Early Stress on Brain Structure and Function: Implications for Understanding the Relationship Between Child Maltreatment and Depression*, 13 Development & Psychopathology 451 (2001).

[19] Seth Pollak, Dante Cicchetti & Rafael Klorman, *Stress, Memory, and Emotion: Developmental Considerations from the Study of Child Mal-*

a group, individuals with histories of [child sexual abuse], irrespective of their psychiatric diagnosis, manifest significant problems with affect regulation, impulse control, somatization, sense of self, cognitive distortions, and problems with socialization. Many of these processes are believed to have developmentally sensitive neuronal and behavioral periods related to brain maturation and early caretaker interactions."[20]

Physical Abuse and Brain Injuries

Physical injury, particularly traumatic brain injuries (TBI), can have a substantial and adverse effect on a child's neurological development.[21] Such brain injuries can befall children from a variety of causes, including those that are intentionally

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treatment, 10 Development & Psychopathology 811, 822 (1998) ("[L]ack of flexibility in the regulation of emotion would likely create a mismatch between action and situation, and result in inappropriate behavioral responses. This latter description better characterizes the kinds of problems observed with maltreated children."); *see also* Catherine C. Ayoub, Erin O'Connor et al., *Cognitive and Emotional Differences in Young Maltreated Children: A Translational Application of Dynamic Skill Theory*, 18 Development & Psychopathology 679, 683 (2006) (if "maltreatment is recurrent, which it often is, then these traumatogenic responses become habitual and generalized").

[20] Frank W. Putnam, *Ten-Year Research Update Review: Child Sexual Abuse*, 42 J. Am. Acad. Child & Adolescent Psychiatry 269, 273 (2003) (citation omitted); *see also* Michael D. De Bellis, Matcheri S. Keshavan et al., *Developmental Traumatology Part II: Brain Development*, 45 Biological Psychiatry 1271, 1278-79 (1999). *See generally* Jan Volavka, *The Neurobiology of Violence: An Update*, 11 J. Neuropsychiatry & Clinical Neurosciences 307 (1999).

[21] *See generally* National Institutes of Health, *Rehabilitation of Persons with Traumatic Brain Injury*, 282 JAMA 974 (Consensus Development Panel 1999); Jean A. Langlois, Wesley Rutland-Brown et al., *The Epidemiology and Impact of Traumatic Brain Injury*, 21 J. Head Trauma Rehabilitation 375 (2006).

inflicted and those that are accidental.[22] Apparently those children whose brain injuries are deliberately inflicted, such as the victims of child abuse, may suffer more serious consequences than children whose injuries are accidental.[23] While it is well recognized that such injuries have a substantial impact on the functioning of adult brains,[24] the developmental effects on children's brains are now becoming more fully understood.[25] In addition to adverse effects on a

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[22] *See* Heather T. Keenan, Desmond K. Runyan et al., *A Population-Based Comparison of Clinical and Outcome Characteristics of Young Children with Serious Inflicted and Noninflicted Traumatic Brain Injury*, 114 Pediatrics 633 (2004). It appears that such injuries occur more frequently to boys than to girls. Samuel R. Reid, Jon S. Roesler et al., *The Epidemiology of Pediatric Traumatic Brain Injury in Minnesota*, 155 Archives Pediatrics & Adolescent Med. 784, 785 (2001).

[23] *See* Linda Ewing-Cobbs, Larry Kramer et al., *Neuroimaging, Physical, and Developmental Findings After Inflicted and Noninflicted Traumatic Brain Injury in Young Children*, 102 Pediatrics 300, 304 (1998) ("Children with inflicted and noninflicted TBI had different patterns of neuroimaging, physical, and cognitive findings. Although both groups had negative histories of previous brain injury, signs of preexisting brain injury . . . were apparent in 40% to 45% of children with inflicted TBI and in none of the children with noninflicted injuries."); Heather T. Keenan, Desmond K. Runyan & Maryalice Nocera, *Child Outcomes and Family Characteristics 1 Year After Severe Inflicted or Noninflicted Traumatic Brain Injury*, 117 Pediatrics 317, 321 (2006); Carla DiScala, Robert Sege et al., *Child Abuse and Unintentional Injuries: A 10-Year Retrospective*, 154 Archives Pediatrics & Adolescent Med. 16 (2000) ("children who were abused developed extensive functional limitations more frequently than those unintentionally injured").

[24] *See* American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders* 164 (4th ed., text rev. 2000) [hereinafter "DSM-IV-TR"] (Dementia Due to Head Trauma). For an explanation of this process in adults, with particular emphasis on physiological and anatomical harm to the brain, see Erin D. Bigler, Carol V. Anderson & Duane D. Blatter, *Temporal Lobe Morphology in Normal Aging and Traumatic Brain Injury*, 23 Am. J. Neuroradiology 255 (2002).

[25] *See, e.g.*, Keenan, Runyan & Nocera, *supra* note 23, at 318 ("Although it was once thought that the plasticity of the infant brain

variety of measures of health,[26] such injuries can produce cognitive impairment, impede learning, and result in reduced measured intelligence.[27]

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would allow very young children to compensate for injuries, that premise has been brought into question. Surviving children may be faced with lifelong impairments in multiple areas of functioning."); Vicki Anderson, Cathy Catroppa et al., *Functional Plasticity or Vulnerability After Early Brain Injury?*, 116 Pediatrics 1374 (2005) ("Despite the commonly held view that young children's brains are able to adapt to the impact of severe insults, clinical reports indicate that residual problems occur in a range of skills, including intellectual ability, attention, and memory.").

[26] Beth S. Slomine, Melissa L. McCarthy et al., *Health Care Utilization and Needs After Pediatric Traumatic Brain Injury*, 117 Pediatrics 663 (2006) (reporting the damage TBI can inflict and its impact in worsening pre-existing problems). *See generally* Ricardo E. Jorge, *Neuropsychiatric Consequences of Traumatic Brain Injury: A Review of Recent Findings*, 18 Current Opinion in Psychiatry 289 (2005).

[27] *See* American Association on Mental Retardation, *Mental Retardation: Definition, Classification, and Systems of Supports* 128-30 (10th ed. 2002). There are strong indications that injuries in the early, formative years of brain development produce more significant and lasting reduction in cognitive functioning and IQ. *See* DSM-IV-TR at 151 (dementia is relatively uncommon among children, but can be caused by head injury). *See generally* Melissa L. McCarthy, Ellen J. MacKenzie et al., *Health-Related Quality of Life During the First Year After Traumatic Brain Injury*, 160 Archives Pediatrics & Adolescent Med. 252, 256 (2006) (reporting that the extent of cognitive impairment correlated with extent of the brain injury). *See, e.g.*, Anderson, Catroppa et al., *supra* note 25, at 1380-81. *But see* Linda Ewing-Cobbs, Marcia Barnes et al., *Modeling Longitudinal Academic Achievement Scores After Pediatric Traumatic Brain Injury*, 25 Developmental Neuropsychology 107, 126-27 (2004) (suggesting more significant reduction for younger TBI victims' academic performance in arithmetical skills than for reading comprehension). This latter result appears consistent with the finding of performance deficits among children with PTSD on a variety of measures, including attention, and abstract reasoning and executive function, but not in language skills or psychomotor speed. Sue R. Beers & Michael D. De Bellis, *Neuropsychological Function in Children with Maltreatment-Related Posttraumatic Stress Disorder*, 159 Am. J. Psychiatry 483, 485 (2002). These differential results appear consistent with the conclusion that the

Childhood brain injuries can also alter the individual's personality both in childhood and in adult life.[28] And these injuries have been strongly statistically correlated with behavioral[29] problems in adulthood,[30] particularly impulsivity,[31] as well as alcohol and drug abuse.[32] Such personality

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cognitive impact of childhood PTSD involves specific brain functions, rather than merely a generalized diminution in overall performance.

[28] *See, e.g.*, Jeffrey Edwin Max, Brigette Anna Marie Robertson et al., *The Phenomenology of Personality Change Due to Traumatic Brain Injury in Children and Adolescents*, 13 J. Neuropsychiatry & Clinical Neurosciences 161, 164-65 (2001) (reporting, inter alia, increased aggressivity and impaired social judgment in roughly 40% of children studied); Jeffrey E. Max, Harvey S. Levine et al., *Predictors of Personality Change Due to Traumatic Brain Injury in Children and Adolescents Six to Twenty-Four Months After Injury*, 18 J. Neuropsychiatry & Clinical Neurosciences 21, 30 (2006) (reporting the persistence of personality change in childhood and the significance of frontal lobe lesions in the severity of the personality change). *See generally* DSM-IV-TR at 188 (personality change due to head trauma, particularly injury to the frontal lobes).

[29] *See, e.g.*, Michael Sarapata, Douglas Herrmann et al., *The Role of Head Injury in Cognitive Functioning, Emotional Adjustment and Criminal Behavior*, 12 Brain Injury 821 (1998).

[30] *See* Wade C. Myers, Kerrilyn Scott et al., *Psychopathology, Biopsychosocial Factors, Crime Characteristics, and Classification of 25 Homicidal Youths*, 34 J. Am. Acad. Child & Adolescent Psychiatry 1483, 1485 (1995) (reporting that the most frequent medical condition in the subjects' histories was "serious head trauma").

[31] *See* Moeller, Barratt et al., *supra* note 9, at 1785.

[32] *See, e.g.*, Ricardo E. Jorge, Sergio E. Sarkstein et al., *Alcohol Misuse and Mood Disorders Following Traumatic Brain Injury*, 62 Archives Gen. Psychiatry 742 (2006); Michael David Horner, Pamela L. Ferguson et al., *Patterns of Alcohol Use 1 Year After Traumatic Brain Injury: A Population-Based, Epidemiological Study*, 11 J. Int'l Neuropsychol. Soc. 322 (2005); Karen Heffernan, Marylene Cloitre et al., *Childhood Trauma as a Correlate of Lifetime Opiate Use in Psychiatric Patients*, 25 Addictive Behaviors 797 (2000); *cf.* Michael D. De Bellis, *Developmental Traumatology: A Contributory Mechanism for Alcohol and Substance Abuse Disorders*, 27 Psychoneuroendocrinology 155, 158 (2002)

changes in children often constitute clinically recognized mental illness, and the mental illness, as well as its behavioral consequences, can endure into adulthood.

Mental illness that results from traumatic brain injury may show up in the immediate aftermath of the injury.[33] In other cases, the symptoms do not manifest themselves until some years later.[34] And while other psychiatric disorders are strongly associated with brain injury, particularly affective disorders like major depression,[35] the strongest correlation may be with posttraumatic stress disorder (PTSD).[36] The American Psychiatric Association defines PTSD as:

(indicating that adult victims of child abuse with mental illness may use alcohol to alleviate psychiatric symptoms).

[33] *See, e.g.*, Jeffrey E. Max, Donald A. Robin et al., *Traumatic Brain Injury in Children and Adolescents: Psychiatric Disorders at One Year*, 10 J. Neuropsychiatry 290 (1998).

[34] *See* Daryl Fujii & Iqbal Ahmed, *Characteristics of Psychotic Disorder Due to Traumatic Brain Injury: An Analysis of Case Studies in the Literature*, 14 J. Neuropsychiatry & Clinical Neurosciences 130, 131 (2002) and sources cited therein (reporting that a majority of TBI subjects who developed psychotic symptoms experienced delayed onset).

[35] *See, e.g.*, Ricardo E. Jorge, Robert G. Robinson et al., *Major Depression Following Traumatic Brain Injury*, 61 Archives Gen. Psychiatry 42 (2004) (reporting strong relationship to major depression and the occurrence of aggressive behavior), and sources cited therein.

[36] Amanda E. Guyer, Joan Kaufman et al., *Behavioral Alterations in Reward System Function: The Role of Childhood Maltreatment and Psychopathology*, 45 J. Am. Acad. Child & Adolescent Psychiatry 1059, 1060 (2006); Michael D. De Bellis, *Developmental Traumatology: The Psychobiological Development of Maltreated Children and Its Implications for Research, Treatment, and Policy*, 13 Development & Psychopathology 539, 541 (2001) ("Chronic PTSD symptoms may provide the mechanisms for the pervasive psychopathology seen in maltreated children."); *see* Robert van Reekum, Tammy Cohen & Jenny Wong, *Can Traumatic Brain Injury Cause Psychiatric Disorders?*, 12 J. Neuropsychiatry & Clinical Neurosciences 316, 323-24 (2000); Jorge, *supra* note 26, at 292.

> [T]he development of characteristic symptoms following exposure to an extreme traumatic stressor involving direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate.

DSM-IV-TR at 463.[37] It is now clear that children can and do suffer from PTSD.[38]

Recent studies have made clear that the phenomenon of PTSD in children has a physical manifestation. For example, in a widely cited study, researchers compared the MRI brain images of children who had experienced abuse-related PTSD with those of a control group. The study found that "subjects with maltreatment-related PTSD had smaller intercranial, cerebral, and prefrontal cortex volumes, prefrontal cortical white matter and right temporal lobe volumes" when compared to non-abused control subjects.[39] In addition, stressors

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[37] "For children, sexually traumatic events may include developmentally inappropriate sexual experiences without threatened or actual violence or injury. Witnessed events include, but are not limited to, observing the serious injury or unnatural death of another person due to violent assault, accident, war, or disaster or unexpectedly witnessing a dead body or body parts. . . . The disorder may be especially severe or long lasting when the stressor is of human design (e.g., torture, rape). The likelihood of developing this disorder may increase as the intensity of and physical proximity to the stressor increase." DSM-IV-TR at 464. (The DSM's classification number for PTSD is 309.81.)

[38] *See, e.g.*, Michael S. Scheeringa, Charles H. Zeanah et al., *Two Approaches to the Diagnosis of Posttraumatic Stress Disorder in Infancy and Early Childhood*, 34 J. Am. Acad. Child & Adolescent Psychiatry 191 (1995).

[39] Michael D. De Bellis, Matcheri S. Keshavan et al., *Brain Structures in Pediatric Maltreatment-Related Posttraumatic Stress Disorder: A*

in the lives of children have also been observed and measured in children's limbic systems and in abnormalities in their EEGs.[40]

The damage caused by PTSD can be directly relevant to questions involving mitigation in capital cases[41] and can be crucial in helping jurors understand a defendant's behavior that may otherwise be inexplicable. Even more importantly, an understanding of PTSD can assist members of the jury in recognizing a defendant's actions as a consequence of a

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Sociodemographically Matched Study, 52 Biological Psychiatry 1066, 1070 (2002); *see id.* at 1073 ("The positive correlations between intracranial and cerebral volumes with age of onset of PTSD trauma and negative correlations with duration of PTSD trauma suggests that traumatic childhood experiences may adversely influence brain development."). The researchers also found gender differences in the impact of PTSD in children. "Our findings may suggest that boys may be more vulnerable to the effects of severe stress on brain development than girls. This vulnerability may lead to decreased adult resilience. Thus, being male may constitute a neurobiologic risk marker for stress-related vulnerability for adverse brain development during childhood." *Id.* at 1075. *But see* Meena Vythilingam, Christine Heim et al., *Childhood Trauma Associated with Smaller Hippocampal Volume in Women with Major Depression*, 159 Am. J. Psychiatry 2072 (2002). A more recent study found abuse-related size differences in the cerebellum. Michael D. De Bellis & Maragatha Kuchibhatla, *Cerebellar Volumes in Pediatric Maltreatment-Related Posttraumatic Stress Disorder*, 60 Biological Psychiatry 697 (2006).

[40] Teicher, Andersen et al., *supra* note 15, at 404; *see also* Yutaka Ito, Martin H. Teicher et al., *Preliminary Evidence for Aberrant Cortical Development in Abused Children: A Quantitative EEG Study*, 10 J. Neuropsychiatry & Clinical Neurosciences 298 (1998).

[41] The list of the "constellation of symptoms" that are "more commonly seen in association with an interpersonal stressor (e.g., childhood sexual or physical abuse, domestic battering)" includes "impaired affect modulation; self-destructive and impulsive behavior; . . . social withdrawal; feeling constantly threatened; impaired relationships with others; [and] a change from the individual's previous personality characteristics." DSM-IV-TR at 465.

serious mental disorder. This knowledge is beyond the ken of the average juror and would dispel the false impression of a different, criminal motivation.

The developmental consequences of physical abuse of a child extend beyond the specific physical results of traumatic brain injury. Abundant evidence also shows that the nature of a physically abusive relationship can have lasting adverse consequences on the child later in life. It is now widely accepted that a relationship characterized by physical abuse disrupts and distorts the child's cognitive, emotional, and social development.[42]

Severe Neglect

Like traumatic brain injury, severe neglect can stunt the neurological development of children and negatively affect

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[42] "Abuse diminishes the social and emotional support necessary for accomplishing the major developmental milestones in children's lives." Suzanne Salzinger, Richard S. Feldman et al., *The Effect of Physical Abuse on Children's Social and Affective Status: A Model of Cognitive and Behavioral Processes Explaining the Association*, 13 Development & Psychopathology 805 (2001).

Of course, not every child who suffers abuse manifests the same psychopathology and behavioral consequences. *See generally* Jean Marie McGloin & Cathy Spatz Widom, *Resilience Among Abused and Neglected Children Grown Up*, 13 Development & Psychopathology 1021, 1035 (2001) (reporting 22% of the sample of abused children did not manifest the mental health and behavioral consequences "despite the major stresses and risk posed by their earlier childhood experiences," and noting that there was somewhat greater incidence of resilience among females in the sample than among males). Factors that produce this atypical result in a minority of abuse victims are not fully understood. *See generally* Ann S. Masten, Jon J. Hubbard et al., *Competence in the Context of Adversity: Pathways to Resilience and Maladaptation from Childhood to Late Adolescence*, 11 Development & Psychopathology 143 (1999).

their functioning and behavior as adults.[43] The emotional and developmental harm suffered by children who are subjected to grave neglect has long been recognized in the clinical literature.[44] Recent studies have made clear that the resulting damage to such children can extend beyond emotional responses.[45] Neglected children experience substantially delayed cognitive development, and deficits in both academic achievement and IQ.[46]

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[43] Child neglect is defined as "failure to act on the part of a parent or caretaker, which results in death, serious physical or emotional harm" or "an act or failure to act which presents an imminent risk of serious harm." 42 U.S.C. § 5106(g) (2000). It is estimated that child neglect constitutes roughly 60% of the reported cases of child abuse. U.S. Department of Health and Human Services, *Child Maltreatment 2002: Reports from the States to the National Child Abuse and Neglect Data System* xiv (2002).

[44] *See, e.g.*, Henry Dwight Chapin, *Systematized Boarding Out vs. Institutional Care for Infants and Young Children*, 105 N.Y. Med. J. 1009, 1011 (1917); Harry T. Chugani, Michael E. Behen et al., *Local Brain Functional Activity Following Early Deprivation: A Study of Post-Institutionalized Romanian Orphans*, 14 Neuroimage 1290 (2001) (reporting dramatic effects revealed by MRI imaging); Michael Rutter, Lucie Andersen-Wood et al., *Quasi-Autistic Patterns Following Severe Early Global Privation*, 40 J. Child Psychology & Psychiatry 537 (1999) (Romanian orphanages); Wayne Dennis, *Children of the Crèche* (1973) (Lebanese orphanage). *See also* DSM-IV-TR at 128 ("Extreme neglect—and especially institutional care with limited opportunities to form selective attachments—increases the risk of developing [Reactive Attachment Disorder].").

[45] "[T]he child exposed to chaotic or threatening caregiving develops a sensitized stress-response system that affects arousal, emotional regulation, behavioral reactivity, and even cardiovascular regulation. These sensitized children are at risk for stress-induced neuropsychiatric problems later in life." Perry & Pollard, *supra* note 6, at 40 (citations omitted).

[46] Cynthia M. Perez & Cathy Spatz Widom, *Childhood Victimization and Long-Term Intellectual and Academic Outcomes*, 18 Child Abuse & Neglect 617, 626 (1994) ("child abuse and neglect represent significant risk factors for poor long-term intellectual and academic outcomes"); *id.*

Severely neglected children are also at increased risk for substantial mental illness.[47] While some of the mental illness traces to purely psychological causes, the evidence strongly indicates that many of the mental health symptoms and learning problems associated with child neglect arise from the biological effects of stress.[48] "Disruptions of experience-dependent critical neurochemical signals during early life may lead to major abnormalities or deficits in neuro-development. Disruption of critical neuro-developmental cues can result from (1) lack of sensory experience during sensitive periods (e.g., neglect) or (2) atypical or abnormal patterns of necessary cues due to extremes of experience (e.g., traumatic stress)."[49]

Sexual and Emotional Abuse

Similarly, emotional and sexual abuse of children can have lasting, and tragic, consequences. The harms of sexual abuse are well documented.[50] But modern research is revealing that the same neurobiological processes that render traumatic brain injuries and severe neglect so damaging to children can

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at 624 ("the decreased intellectual functioning observed in the abused and/or neglected subjects in young adulthood remained significant despite controls for economic status and other variables"); *see id.* at 630-32 (citing to clinical literature). *See also* Kaplan, Pelcovitz & Labruna, *supra* note 18, at 1216; Shanta R. Dube, Vincent J. Felitti et al., *The Impact of Adverse Childhood Experiences on Health Problems: Evidence from Four Birth Cohorts Dating Back to 1900*, 37 Preventive Medicine 268 (2003).

[47] *See, e.g.*, DSM-IV-TR at 96 (parental neglect, rejection, and other forms of abuse may predispose children for conduct disorder).

[48] De Bellis, *supra* note 7, at 155-64.

[49] Perry, *supra* note 12, at 87 (citation omitted).

[50] *See, e.g.*, Cheryl Lanktree, John Briere & Lisa Zaidi, *Incidence and Impact of Sexual Abuse in a Child Outpatient Sample: The Role of Direct Inquiry*, 15 Child Abuse & Neglect 447 (1991); Angela Brown & David Finkelhor, *Impact of Child Sexual Abuse: A Review of the Research*, 99 Psychological Bulletin 66 (1986).

also result from sexual abuse.[51] As with other forms of child abuse, the damaging effects of sexual abuse are not always immediately apparent; sometimes they only appear months or years later.[52] Predicting which children will have such delayed reactions, known as "sleeper effects,"[53] has proven difficult.[54] Sometimes the damage goes undetected until the individual becomes an adult.

While our society now widely recognizes the harm caused by sexual abuse of children, there is, perhaps, a tendency to minimize the consequences of sustained, severe verbal abuse and other forms of substantial psychological injury. But particularly when it accompanies other types of abuse, verbal abuse can have comparably serious consequences for the child. For example, one study found that "[c]ombined exposure to verbal abuse and witnessing of domestic violence

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[51] Christine Heim, D. Jeffrey Newport et al., *Altered Pituitary-Adrenal Axis Responses to Provocative Challenge Tests in Adult Survivors of Childhood Abuse*, 158 Am. J. Psychiatry 575 (2001); *see* Frank W. Putnam & Penelope K. Trickett, *Psychobiological Effects of Sexual Abuse: A Longitudinal Study*, 821 Annals N.Y. Acad. Sci. 150, 157-58 (1997); Dong, Anda et al., *supra* note 4, at 633-35 (reporting results consistent with neuropsychiatric studies of other forms of abuse).

[52] "When evaluated with standard instruments, up to 40% of sexually abused children may present with few or no symptoms. A number of reasons have been offered including the possibility that asymptomatic children had minor abuse, that they are more resilient, or that they have a coping style that masks their distress." Putnam, *supra* note 20, at 274 (citations omitted). *See also* Karen J. Saywitz, Anthony P. Mannarino et al., *Treatment for Sexually Abused Children and Adolescents*, in *Annual Progress in Child Psychiatry and Child Development* 455, 457 (Margaret E. Hertzig & Ellen A. Farber eds., 2003).

[53] Putnam, *supra* note 20, at 274.

[54] Jennifer Tebbutt, Heather Swanston et al., *Five Years After Child Sexual Abuse: Persisting Dysfunction and Problems of Prediction*, 36 J. Am. Acad. Child & Adolescent Psychiatry 330, 337-38 (1997) (family environment and abuse-related variables have not proven to be good predictors of long-term mental problems).

was associated with extraordinarily large adverse effects, particularly on dissociation. This finding is consonant with studies that suggest that emotional abuse may be a more important precursor of dissociation than is sexual abuse."[55]

Mental Illness and Disability Resulting from Abuse

The physiological effects of child abuse are often permanent and can continue into adulthood, with serious consequences for perception, functioning, and behavior. The persistence of the effects of childhood abuse is well-documented in the area of mental illness.[56] This is particularly true for PTSD. "Even if childhood trauma does not result in childhood PTSD, it increases the risk for adult PTSD and adult psychiatric illness."[57] An all-too-frequently encountered pattern is that of individuals who had been abused as children later committing acts of abuse as adults.[58]

Another consequence of childhood abuse or traumatization can be a reduction in the individual's intellectual abilities and intelligence. The clearest and most obvious example is when the child suffers a traumatic brain injury during the de-

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[55] Martin H. Teicher, Jacqueline A. Samson et al., *Sticks, Stones, and Hurtful Words: Relative Effects of Various Forms of Childhood Maltreatment*, 163 Am. J. Psychiatry 993, 997 (2006); *see also id.* at 998 ("Combined exposure to different categories of abusive experiences often equaled or exceeded the impact of exposure to familial sexual abuse. This is of great importance as it suggests that combined exposure to less blatant forms of abuse may be just as deleterious as the most egregious acts we confront.").

[56] *See* Kaplan, Pelcovitz & Labruna, *supra* note 18, at 1217-18.

[57] De Bellis, *supra* note 36, at 543 (citations omitted); *see* Anda, Felitti et al., *supra* note 15, at 180.

[58] *See* Katherine C. Pears & Deborah M. Capaldi, *Intergenerational Transmission of Abuse: A Two-Generational Prospective Study of an At-Risk Sample*, 25 Child Abuse & Neglect 1439 (2001). *See generally* De Bellis, Broussard et al., *supra* note 4.

velopmental period.[59] A brain injury during development can adversely affect the child's ability to learn and process information.

Modern research has confirmed the perhaps less obvious conclusion that the same sort of reduced intellectual ability can result from non-physical injury, such as PTSD.[60] The physical character of this reduced cerebral ability is shown in studies that demonstrate that children who suffer PTSD during key developmental periods may, as a result, actually have smaller brain mass.[61] In some cases, the impact of PTSD can be identified in physical imaging of the individual's brain.[62]

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[59] *See* Boris Birmaher & Daniel T. Williams, *30 Acquired Brain Disorders*, in *Child and Adolescent Psychiatry: A Comprehensive Textbook* 371-72 (Melvin Lewis ed., 2d ed. 1991). *See generally* McCarthy, MacKenzie et al., *supra* note 27, at 256 (reporting that the extent of cognitive impairment correlated with extent of the brain injury).

[60] *See* Joshi, Daniolos & Salpekar, *supra* note 13, at 842; Perez & Widom, *supra* note 46, and sources cited therein.

[61] *See, e.g.*, Victor G. Carrion, Carl F. Weems et al., *Attenuation of Frontal Asymmetry in Pediatric Posttraumatic Stress Disorder*, 50 Biological Psychiatry 943, 948 (2001) ("Our results indicate that children with a history of exposure to trauma and with resulting posttraumatic stress symptoms had significantly smaller total brain and cerebral volumes than an age- and gender-matched healthy control group."); J. Douglas Bremner, *Long-Term Effects of Childhood Abuse on Brain and Neurobiology*, 12 Child & Adolescent Psychiatric Clinics N. Am. 271, 279 (2003) (reporting several studies finding reduced hippocampal volume (areas involving new learning and memory) in the brains of abused children). *See also* De Bellis, Keshavan et al., *supra* note 20, at 1278-79; Kaufman & Charney, *supra* note 18, at 462 ("the children and adolescents with PTSD were found to have smaller intracranial and cerebral volumes than matched controls, increased right, left, and total lateral ventrical volume; and decreased volume of the medial and posterior portions of the corpus callosum") (citation omitted).

[62] Beers & De Bellis, *supra* note 27, at 483.

A defendant's history of child abuse and any resulting mental problems are exactly the kind of evidence that jurors could find powerfully mitigating. This evidence helps explain why a defendant acted as he did. But there is nothing about it that categorically demonstrates that the defendant is less likely to be dangerous in the future. Indeed, jurors might well conclude that the neurological permanence of the injury could make it *more* likely that the defendant would re-offend. Therefore the question about future dangerousness is not an adequate vehicle for evaluating the *mitigating* significance of a defendant's mental condition.

III. EVIDENCE OF A CAPITAL DEFENDANT'S MENTAL ILLNESS ALSO CONSTITUTES A TWO-EDGED SWORD.

Just as mental illness that results from child abuse is a mitigating factor that is beyond the effective reach of jurors under the Texas system, so, too, is a defendant's mental illness, regardless of its etiology or age of onset.

The mitigating significance of mental illness is well-established. The relevance of mental illness is reflected in the fact that virtually all states that list statutory mitigating factors include a defendant's mental condition as a mitigating circumstance. *Penry v. Lynaugh*, 492 U.S. at 337 (opinion of O'Connor, J.). Nonetheless, Texas jurors are faced with the conundrum of how to consider its true mitigating effect within the confines of the question about prospective dangerousness.

Evidence of a defendant's mental illness may well be deemed relevant to his future dangerousness, but it may be seen as relevant because it renders him *more* dangerous, rather than less.

Public perceptions of mental illness change over time, but the change is not unidirectional. While there appears to be a

somewhat greater general public acceptance of people with mental illness in recent decades, it has not been accompanied by reduced fear of the dangerousness they may be thought to pose. Indeed, the available evidence suggests that the fear of future dangerousness from people with mental illness, particularly psychotic conditions, has actually *increased.*[63]

The fear, often exaggerated fear,[64] that jurors may harbor about the effect of a defendant's mental illness on his future dangerousness surely makes evidence of that illness just the kind of two-edged sword that the special issues cannot reasonably be thought to accommodate.

Nor can mental illness be equated with a defendant's youth in the context of a prediction about future dangerousness. A central attribute of a defendant's young age is that he will

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[63] Jo C. Phelan, Bruce G. Link et al., *Public Conceptions of Mental Illness in 1950 and 1996: What Is Mental Illness and Is It to be Feared?*, 41 J. Health & Social Behav. 188, 202 (2000) ("Perceptions that such people are dangerous increased nearly two and a half times since 1950 to a point that, in 1996, nearly one-third of respondents spontaneously volunteered the idea that psychotic persons may be violent."); *see also* Bernice A. Pescosolido, John Monahan et al., *The Public's View of the Competence, Dangerousness, and Need for Legal Coercion of Persons with Mental Health Problems*, 89 Am. J. Pub. Health 1339, 1341 (1999) ("Americans continue to discriminate among different types of mental health problems regarding dangerousness. However, levels of concern are high."); Patrick W. Corrigan & Amy E. Cooper, *Mental Illness and Dangerousness* 165-79 (Patrick W. Corrigan ed., American Psychological Association 2005). On the role of media portrayals in shaping public perceptions, see Otto F. Wahl, *Media Madness: Public Images of Mental Illness* 56-86 (1995).

[64] For a more realistic assessment, see Jeffrey W. Swanson, *Mental Disorder, Substance Abuse, and Community Violence: An Epidemiological Approach*, in *Violence and Mental Disorder: Developments in Risk Assessment* 101-36 (John Monahan & Henry J. Steadman eds., 1994).

predictably and inevitably get older.[65] The characteristics of mental illnesses are quite different. While mental illnesses differ from one another, their alleviation is seldom predictably inevitable. Our scientific and clinical understanding of the recurring, and sometimes intractable, nature of many forms of mental illness is growing.[66] That increased knowledge can help us treat many patients more effectively, and it also helps us understand more fully why some of them commit otherwise inexplicable criminal acts. But it does not, by itself, automatically reassure us about their future condition or actions.

Although the public's fears about prospective dangerousness are often exaggerated, we cannot expect jurors to give fair consideration to mental health evidence if they can only express their understanding of its mitigating role in defendant's criminal acts by deciding that the defendant represents no future danger.

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[65] *See Johnson v. Texas*, 509 U.S. at 368 ("the signature qualities of youth are transient").

[66] In recent years, researchers have come to appreciate the substantial role that physical causes play in the etiology of many mental illnesses. As recently as a few decades ago, leading texts treated that role as inconsequential. *See, e.g.*, C. Knight Aldrich, *An Introduction to Dynamic Psychiatry* 29-30 (1966) ("The possibility of an exclusively physical cause for psychiatric illness is appealing to both physician and patient. . . . So far, however, the evidence for a physical cause or even a major physical causative factor is rather skimpy in most psychiatric illness and virtually nonexistent in many others."). Scientific advances in brain imaging, psychopharmacology, and other fields have made clear that physical causes are far more significant than previously believed. *See, e.g.*, Joseph T. Coyle & Steven E. Hyman, *The Neuroscientific Foundations of Psychiatry*, in *Textbook of Psychiatry* 3-33 (Robert E. Hales, Stuart C. Yudofsky & John A. Talbott eds., 3d ed. 1999); Michael R. Trimble, *Biological Psychiatry* (2d ed. 1996); James G. Hollandsworth, Jr., *The Physiology of Psychological Disorders: Schizophrenia, Depression, Anxiety, and Substance Abuse* (1990); Gelder, Gath et al., *supra* note 17, at 84-103.

CONCLUSION

For the reasons set forth above, *amici* urge this Court to reverse the judgment of the Fifth Circuit.

Respectfully submitted,

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APPENDIX

The American Academy of Child and Adolescent Psychiatry (AACAP) is a non-profit organization whose membership includes over 7,400 child and adult psychiatrists. Established in 1953, the AACAP is the leading national medical association dedicated to treating the myriad mental, behavioral, and developmental disorders suffered by an estimated seven to twelve million American youth. The AACAP strives to improve the quality of life of the children and families subjected to these disorders by providing universal access to care for all children and adolescents, expanding research programs for prevention and treatment of mental illness, and providing other integrated services that meet the needs of the affected children and their families in a community setting. The AACAP is committed to protecting the well-being and rights of the children and families whose lives are affected by these disorders.

The American Association on Intellectual and Developmental Disabilities (AAIDD) was formerly known as the American Association on Mental Retardation (AAMR), and under that name has appeared as *amicus curiae* in this Court in numerous cases. Founded in 1876, AAIDD is the nation's oldest and largest interdisciplinary organization of professionals and other persons who work exclusively in the field of intellectual disabilities. AAIDD promotes progressive policies, sound research, effective practices, and human rights for people with intellectual and developmental disabilities.

The Arc of the United States (formerly known as the Association for Retarded Citizens of the United States), through its 875 state and local chapters, is the largest national voluntary organization in the United States devoted solely to the welfare of the more than seven million children and adults with mental retardation and their families.

Mental Health America (formerly known as the National Mental Health Association) was founded in 1909, and is the country's leading nonprofit organization dedicated to helping people live mentally healthier lives. With more than 320 affiliates nationwide, MHA's membership consists of both mental health professionals and lay citizens concerned about mental health issues.

The National Alliance on Mental Illness (NAMI) is the nation's leading grassroots organization dedicated to improving the lives of persons with severe mental illnesses, including schizophrenia, bipolar disorder (manic-depressive illness), major depression, obsessive-compulsive disorder, and severe anxiety disorders. NAMI strongly opposes the death penalty for people with severe, biologically-based mental illnesses.